

# PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

### Improvements in or relating to Projectiles or Shells.

I, CHARLES WILLIAM BENNETT, a British subject, of in der Höhle 16, Cologne, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention relates to projectiles or shells of the kind which is provided internally with aligned fragile vessels or containers, which are kept apart by a tubular member or ring and hold explosive component ingredients which, when commingled, form a highly explosive compound, the containers being of such a nature that they are broken by shocks resulting from the firing of a gun containing them and thereby permit the component ingredients to mix.

In the chemical world substances are known which, when commingled, form a mixture of such tremendous explosive power that it would be possible to disable with a single projectile containing such a mixture any ship as yet built, but it has not been customary to produce such explosives in quantities exceeding a few drops as they are too dangerous.

The present invention has for its object an improved projectile, of the kind above referred to, which is designed and arranged to allow of such explosives being utilised. To this end, the projectile is provided internally with aligned receptacles or containers for keeping separate and apart, until the projectile is brought into use and fired and strikes an object, component substances, liquid or otherwise, which when mixed constitute the explosive. The receptacles are made of different calculated strengths, which are determined so as, firstly, to be sufficient to ensure the receptacles remaining

intact or unbroken, during transit or handling operations, in the event of the projectile being accidentally let fall or subjected to shock, and secondly, to allow the receptacles being broken or destroyed, one of them by the shock occurring on the gun or like appliance, which is charged with the projectile, being fired, and the other or second receptacle by the oppositely directed shock that occurs on the impact of the projectile with the object fired at. On the receptacles being both thus broken their contents are able to mix, a very highly explosive mixture or material being thereby formed.

Before being fired the projectile or shell would be harmless and remain so until impact is made with an object after being fired. The shocks that might occur by accident in handling or during transit are very small compared with those due to the firing and impact of the shell, and need not be considered in regard to the safety of the shell should it be dropped or fall. The various parts of the shell would be made so strong that accidental explosion would become impossible.

The invention will be further described with reference to the accompanying drawing which is a longitudinal section showing one form of the improved projectile or shell.

In the drawing A denotes the hollow casing constituting the body of the projectile or shell, while B and C are the receptacles or containers, the first being arranged at the head of the shell and the other near the base, the two being kept apart and in position by means of an interposed hollow cylindrical member or adjuster D, which forms a reaction chamber of sufficient size for the mixing of the component substances and the chemical

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action to occur. The rear portion or end of the container B is adapted to be destroyed by the firing shock, and the liquid or other substance therein is forced by the same shock into the member D. The fact that on firing only one container is destroyed ensures absolute security against premature explosion in a gun. As soon as the shell A strikes an object, the front end of container C is destroyed by the shock or impact and the two substances from the containers become intermingled, the shell simultaneously penetrating the object hit and becoming very hot, especially if the object is an armour plate. The heat generated is favourable to the chemical reaction.

The containers may alternatively be indirectly broken or destroyed by shock by means of fuses adapted to be operated respectively by the firing and impact shocks.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. A projectile or shell of the kind

ferred to, in which one of the component substances is contained in a receptacle arranged inside and in proximity to the base of the hollow shell body, and the other substance in a receptacle disposed within and near the head of the shell, the latter receptacle being of such a strength that the firing shock will cause it to break or be broken and the former receptacle of such a strength that the impact shock will cause it to break or be broken.

2. A projectile or shell according to Claim 1 in which the two containers are separated by means of a cylindrical reaction chamber.

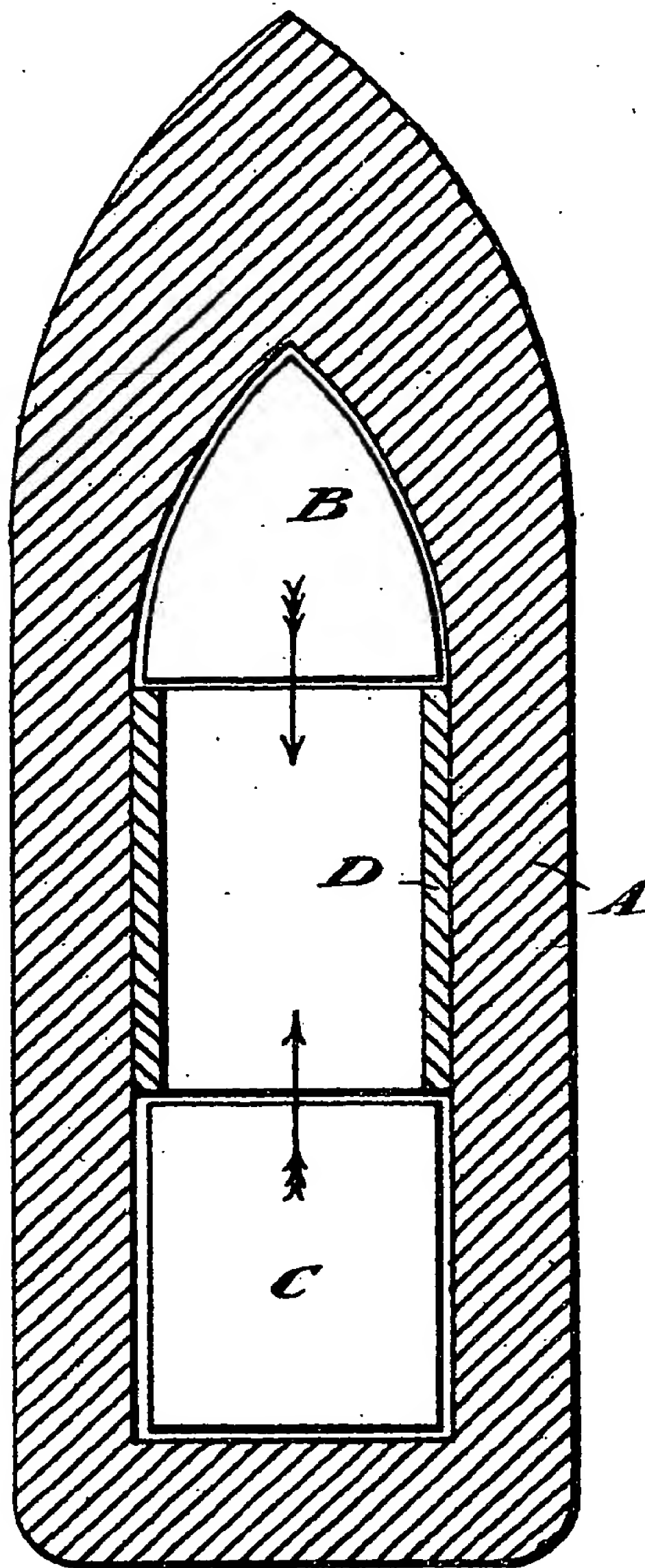
3. A projectile or shell according to Claims 1 and 2, in which the breaking of the two receptacles is effected by means of fuses which are operated respectively by the firing and impact shocks, substantially as described.

Dated this 24th day of June, 1921.

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*[This Drawing is a full-size reproduction of the Original.]*



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